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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,438

02/14/2006

Eiji Ihara

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EXAMINER

LANGEL, WAYNE A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

02/26/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<i>Office Action Summary</i>	Application No.	Applicant(s)	
	10/568,438	IHARA ET AL.	
	Examiner	Art Unit	
	Wayne Langel	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2-14-06, 12-20-06 and 1-28-09</u> .                           | 6) <input type="checkbox"/> Other: ____.                          |

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 16 and 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over either Sumiya et al or EP 0407946. No distinction is seen between the cubic boron nitride disclosed by Sumiya et al and EP 0407946, and that recited in claims 1-4, 16 and 19. Sumiya et al and EP 0407946 both disclose cubic boron nitride which appear to contain amounts of magnesium as recited in claims 1-4, 16 and 19. (See Table 3 in col. 8 of Sumiya et al, and col. 3, line 22 to col. 5, line 6 of EP 0407946.)

Claims 14, 15, 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Sumiya et al or EP 0407946. Sumiya et al and EP 0407946 are relied upon as discussed hereinbefore. Regarding claims 14 and 15, it would be obvious to grind the cubic boron nitride particles of either Sumiya et al or EP 0407946 to any desirable particle size. Regarding claims 17, 18, 20 and 21, sintered CBN and grinding wheels containing CBN are conventional. It would be obvious to form sintered

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CBN or grinding wheels containing CBN from the CBN disclosed by Sumiya et al and EP 0407946.

Claims 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shioi et al '214. Shioi et al '214 discloses a process for converting hexagonal boron nitride to CBN in the presence of such catalysts as alkali and alkaline earth metal carbides, and alkali and alkaline earth metal amides and imides. The alkali metal is preferably lithium, and the alkaline earth metal is preferably magnesium. (See col.1, line 40 to col. 2, line 61.) The difference between the process disclosed by Shioi et al '214, and that recited in claims 5-13, is that Shioi et al '214 does not disclose the specific ratios of carbon, magnesium and lithium as recited in applicants' claims. It would be obvious to provide the specific ratios of carbon, lithium and magnesium as recited in claims 5-13 in the catalyst of Shioi et al '214, since it would be within the skill of one of ordinary skill in the art to determine suitable or optimum amounts of such components. There is no evidence on record of unexpected results which would emanate from using the amounts of catalyst components as recited in claim 5, as opposed to amounts outside such ranges.

The specification and Drawings are objected to under 37 CFR 1.84 (u) (1) in referring to the sole figure as "Fig.1".

The other references are made of record for disclosing methods for converting hexagonal boron nitride to CBN in the presence of various catalysts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Langel whose telephone number is 571-272-

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1353. The examiner can normally be reached on Monday through Friday, 8 am - 3:30 pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Langel/  
Primary Examiner, Art Unit 1793